

WHAT IS CLAIMED IS:

1. An apparatus allowing electronic-parts-implementing boards to be incorporated thereinto, said apparatus comprising:
 - a housing having at least a front surface and a back surface;
 - a first electronic-parts-implementing board having multiple board connection terminals each being arranged apart at a specific interval thereon, said first electronic-parts-implementing board being incorporated in said housing;
 - a second electronic-parts-implementing board having a group of electrodes, said second electronic-parts-implementing board being connected with one of the multiple board connection terminals of said first electronic-parts-implementing board with the group of electrodes of said second electronic-parts-implementing board being inserted into said one of the multiple board connection terminals of said first electronic-parts-implementing board, and said second electronic-parts-implementing board being used for extension of functionality of said first electronic-parts-implementing board; and
 - a third electronic-parts-implementing board having a group of electrodes, said third electronic-parts-implementing board being connected with other one of the multiple board connection terminals of said first electronic-parts-implementing board with the group of electrodes of said third electronic-parts-implementing board being inserted into said other one of the multiple board connection terminals of said first electronic-parts-implementing board, and said third electronic-parts-implementing board being used for extension of functionality of said first electronic-parts-implementing board,

wherein each of said front and back surfaces of said housing has an opening for allowing an operation surface of one of said second and third electronic-parts-implementing boards to be exposed to the outside; and

wherein in said second and third electronic-parts-implementing boards, the respective groups of electrodes of said second and third electronic-parts-implementing boards are inserted to the corresponding board connection terminals of said first electronic-parts-implementing board with an electronic-parts-implementing surface of said second electronic-parts-implementing board and an electronic-parts-implementing surface of said third electronic-parts-implementing board being faced to each other.

2. The apparatus according to claim 1, wherein the respective groups of electrodes of said second and third electronic-parts-implementing boards are electrically connected with the corresponding board connection terminals of said first electronic-parts-implementing board with the operation surface of said second electronic-parts-implementing board being exposed from the opening at the front surface of said housing and the operation surface of said third electronic-parts-implementing board being exposed from the opening at the back surface of said housing.

3. The apparatus according to claim 1,

wherein said second electronic-parts-implementing board has an electronic-parts-implementing prohibitive region; and

wherein said third electronic-parts-implementing board is joined together with said second electronic-parts-implementing board by spatially utilizing the electronic-parts-implementing prohibitive region in said second electronic-parts-implementing board.

4. The apparatus according to claim 1,

wherein said second electronic-parts-implementing board includes a support-fixing member having an engaging portion for screw fixation;

wherein said third electronic-parts-implementing board includes a support-fixing member having an engaging portion for screw fixation; and

wherein the engaging portion of the support-fixing member of said second electronic-parts-implementing board and the engaging portion of the support-fixing member of said third electronic-parts-implementing board are jointly tightened and fixed to said housing.

5. The apparatus according to claim 4,

wherein said second electronic-parts-implementing board includes the support-fixing member on electronic-parts-implementing surface side of said electronic-parts-implementing board;

wherein said third electronic-parts-implementing board includes the support-fixing member on non-electronic-parts-implementing surface side of said electronic-parts-implementing board; and

wherein the supporting-fixing member of said second electronic-parts-implementing board and the support-fixing member of said third electronic-parts-implementing board are fixed with the members being in an overlapped state.

6. The apparatus according to claim 4,

wherein the support-fixing member of said second electronic-parts-implementing board has a convex projecting portion for alignment;

wherein the support-fixing member of said third electronic-parts-implementing board has a concave notch portion for alignment; and

wherein, when jointly tightening, the convex projecting portion of the support-fixing member of said second electronic-parts-implementing board is inserted into the concave notch portion of the support-fixing member of said third electronic-parts-implementing board to be fitted with each other.

7. The apparatus according to claim 6,

wherein the concave notch portion of the support-fixing member of said third electronic-parts-implementing board has a convex projecting portion for alignment;

wherein said housing includes any one of a concave notch portion for alignment and a circular opening for alignment; and

wherein, when jointly tightening, the convex projecting portion of the support-fixing member of said third electronic-

parts-implementing board is inserted into any one of the concave notch portion and the circular opening of said housing to be fitted with each other.

8. A method for allowing an electronic-parts-implementing board to be incorporated with an operation surface of said electronic-parts-implementing board being exposed to the outside through an opening previously formed in a specific housing at its front surface and its back surface, said method comprising the steps of:

incorporating a first electronic-parts-implementing board having multiple board connecting terminals each being arranged apart at a specific interval to an inside of said housing;

preparing a second electronic-parts-implementing board having a group of electrodes for connecting said second electronic-parts-implementing board with said first electronic-parts-implementing board and a third electronic-parts-implementing board having a group of electrodes for connecting said third electronic-parts-implementing board with said first electronic-parts-implementing board, and at the same time, locating said second and third electronic-parts-implementing boards with an electronic-parts-implementing surface of said second electronic-parts-implementing board and an electronic-parts-implementing surface of said third electronic-parts-implementing board being faced to each other; and

connecting the group of electrodes of said second electronic-parts-implementing board with one of the board connection

terminals of said first electronic-parts-implementing board, and connecting the group of electrodes of said third electronic-parts-implementing board with other one of the board connection terminals of said first electronic-parts-implementing board.

9. The method according to claim 8, wherein the respective groups of electrodes of said second and third electronic-parts-implementing boards are electrically connected with the board connection terminals of said first electronic-parts-implementing board with the operation surface of said second electronic-parts-implementing board being exposed from the opening at the front surface of said housing and the operation surface of said third electronic-parts-implementing board being exposed from the opening at the back surface of said housing.

10. The method according to claim 8, further comprising the steps of:

setting an electronic-parts-implementing prohibitive region in said second electronic-parts-implementing board; and

joining said third electronic-parts-implementing board together with said second electronic-parts-implementing board by spatially utilizing the electronic-parts-implementing prohibitive region in said second electronic-parts-implementing board.

11. The method according to claim 8, further comprising the steps of:

installing a support-fixing member having an engaging portion for screw fixation in said second electronic-parts-implementing board;

installing a support-fixing member having an engaging portion for screw fixation in said third electronic-parts-implementing board; and

jointly tightening the engaging portion of the support-fixing member of said second electronic-parts-implementing board and the engaging portion of the support-fixing member of said third electronic-parts-implementing board and fixing them to said housing.

12. The method according to claim 11, further comprising the steps of:

installing the support-fixing member in said second electronic-parts-implementing board on the electronic-parts-implementing surface side of said electronic-parts-implementing board, and

installing the support-fixing member in said third electronic-parts-implementing board on non-electronic-parts-implementing surface side of said third electronic-parts-implementing board, and

fixing, in the jointly tightening step, the supporting fixing member of said second electronic-parts-implementing board and the support-fixing member of said third electronic-parts-implementing board in an overlapped state.

13. The method according to claim 11, further comprising the steps of:

providing a convex projecting portion for alignment to the support-fixing member of said second electronic-parts-implementing board;

providing a concave notch portion for alignment to the support-fixing member of said third electronic-parts-implementing board; and

inserting, in the jointly tightening step, the convex projecting portion of the support-fixing member of said second electronic-parts-implementing board into the concave notch portion of the support-fixing member of said third electronic-parts-implementing board and fitting them with each other.

14. The method according to claim 13, further comprising the steps of:

providing a convex projecting portion for alignment to the concave notch portion of the support-fixing member of said third electronic-parts-implementing board;

forming any one of a concave notch portion for alignment and a circular opening for alignment in said housing; and

inserting, in the jointly tightening step, the convex projecting portion of the support-fixing member of said third electronic-parts-implementing board into any one of the concave notch portion and the circular opening of said housing and fitting them with each other.